REMARKS

Amendments

Claims 2, 29-38 and 44-47 are amended to depend from method claim 48. Claim 39 is amended to correspond to the description of R groups at page 10, line 19 - page 14, line 13. In addition, claim 39 is amended to incorporate the recitation of claim 50 (now cancelled), and to exclude the compound 1-[2-benzoyloxymethyl-1,3-dioxolan-4-yl]cytosine. See Step 2 at page 109 and *In re Johnson et al.,* 194 USPQ 187 (CCPA 1977). Claims 47, 58 and 61 are amended to correct minor typographical errors.

New claims 62 -73 are directed to further aspects of applicants' invention. See, e.g., the original claims and the compounds described in applicants' specification.

Election

In the response to applicants' election, the Examiner has examined what is described as a "core structure." However, it is not clear exactly what scope is presently being considered. Applicants respectfully request that the scope of examination be characterized as the compounds of claim 39 wherein R_2 is of the first formula. These compounds clearly should be grouped together as they all exhibit a cytosine base or analogue thereof.

Further, applicants again request that claim 48 (and the claims dependent thereon), which is directed to a method of using a compound of claim 39, be included in the examination. Upon determination that claim 39 is allowed, claim 48 should also be allowable. Thus, examination of claim 48 with the elected invention will not impose any serious burden. In any event, upon determination of allowable compound subject matter, applicants will request rejoinder of method claims like claim 48.

Also, applicants request clarification of the subject matter associated with the individual Groups of the Restriction. Group II is said to be drawn to an assay. This characterization is inaccurate. The claims of this Group are clearly directed to a method of treating cancer, which is evident form their preambles. These claims should be grouped with Group I.

The claims of Group III and Group VII are directed to use of troxacitabine derivatives

with lipophilicity. These claims should be grouped together.

In view of the above remarks, clarification of the Restriction and the subject matter under consideration is respectfully requested.

Rejection Under 35 USC §102(b)

Claims 39 and 49-61 are rejected as allegedly being anticipated by Belleau et al. (US 5,270,315), Belleau et al. (EP 0 337 713), Cheng et al. (WO 92/18517) or "Chu et al." This rejection is respectfully traversed.

Firstly, the rejection refers to "Chu et al.," but does not state which Chu et al. document is being relied on. There are two Chu et al. documents of record, i.e. WO 96/07413 and US 5,817,667. Clarification is requested.

The rejection simply alleges that the references anticipate the "compound of the core structure." The rejection fails to set forth where within the asserted documents there are "described," in accordance with 35 USC §102, embodiments within the scope of applicants' claimed invention. On this basis alone, the rejection should be withdrawn.

To establish anticipation, the prior art reference must teach explicitly or inherently every feature of the claimed invention. Moreover, in making an anticipation rejection, an examiner must show **where each and every feature of the claimed invention is described** in the allegedly anticipatory reference. See, e.g., *Ex parte Levy*, 17 USPQ2d 1461, 1462 (BOPA 1990) ["Moreover, it is incumbent upon the Examiner to identify wherein each and every facet of the claimed invention is disclosed in the applied reference. "] The rejection does not satisfy this requirement and should be withdrawn.

Furthermore, the assertion that the references anticipate the "compound of the core structure" in no way establishes anticipation of applicants' claimed invention. Applicants' claims do not literally encompass all compounds that posses what the Examiner has characterized as the "core structure." See, e.g., the definition of group R^1 and/or the proviso clause in claim 39.

US '315 and EP '713 each discloses a genus of compounds defined by their Formula L. These compounds have are said to antiviral activity. See, e.g., column 3, line 32-column 4, line

28 of US '315 and pages 4-5 of EP '713. With respect to specific compounds, the examples in US '315 and EP '713 disclose the following nucleoside analogue compounds: 2-chloromethyl-4-(thymin-1'-yl)-1,3-dioxolane, 2-acetoxymethyl-4-(thymin-1'-yl)-1,3-dioxolane, 2-hydroxymethyl-4-(thymin-1'-yl)-1,3-dioxolane, 2-benzoyloxymethyl-4-(cytosin-1'-yl)-1,3-dioxolane, and trans-2-hydroxymethyl-4-(cytosin-1'-yl)-1,3-dioxolane, 2-benzoyloxymethyl-4-(adenin-9'-yl)-1,3-dioxolane, 2-hydroxymethyl-4-(adenin-9'-yl)-1,3-dioxolane, 2-benzoyloxymethyl-4-(2'-amino-6'-chloro-(purin-9'-yl)-1,3-dioxolane, cis and trans 2-hydroxymethyl-4-(2'-amino-6'-chloro-(purin-9'-yl)-1,3-dioxolane, cis and trans 2-hydroxymethyl-4-(2'-amino-purin-9'-yl)-1,3-dioxolane, cis and trans 2-hydroxymethyl-4-(2',6'-diamino-purin-9'-yl)-1,3-dioxolane, and 2-hydroxymethyl-4-(guanin-9'-yl)-1,3-dioxolane.

These compounds do not anticipate applicants' claimed invention. See, e.g., the proviso clauses of claim 39. Furthermore, the overall disclosures of US '315 and/or EP '713 do not suggest a compound according to applicants' claimed invention.

WO '517 discloses certain specific compounds and their anti-HBV activity. See, e.g., the compounds disclosed at pages 5-7, page 9, lines 16-21, and page 10, lines 18-22. The compounds described in WO '517 do not anticipate applicants' claimed invention. See, e.g., the proviso clauses of claim 39. Furthermore, the overall disclosure of WO '517 does not suggest a compound according to applicants' claimed invention.

Chu et al. (US 5,817,667) discloses the use of (-)-OddC, i.e., (-)-(2S,4S)-1-(2-hydroxymethyl-1,3-dioxolane-4-yl)cytosine, and derivatives thereof, for the treatment of cancer. See, e.g., column 4, line 25-column 5, line 34. The specific compounds disclosed by US '667 are (-)-(2S,4S)-1-(2-(benzoyloxy)-1,3-dioxolan-4-yl)cytosine, (+)-(2S,4R)-1-(2-(benzoyloxy)-1,3-dioxolan-4-yl)cytosine, and (-)-(2S,4S)-1-(2-hydroxymethyl-1,3-dioxolane-4-yl)cytosine. See Examples 7-8. The compounds described in US '667 do not anticipate applicants' claimed invention. See, e.g., the proviso clauses of claim 39. Furthermore, the overall disclosure of US '667 does not suggest a compound according to applicants' claimed invention.

Similar to US '667, Chu et al. (WO 96/07413) discloses the use of (-)-OddC, i.e., (-)-(2S,4S)-1-(2-hydroxymethyl-1,3-dioxolane-4-yl)cytosine, and derivatives thereof, for the treatment of tumors. See, e.g., page 5, line 17-27, page 7, lines 1-11, and page 12, lines 8-28.

The compounds described in WO '413 do not anticipate applicants' claimed invention. See, e.g., the proviso clauses of claim 39. Furthermore, the overall disclosure of WO '413does not suggest a compound according to applicants' claimed invention.

In view of the above remarks, withdrawal of the rejection is respectfully requested.

Rejection Under 35 USC §102(e)

Claims 39 and 49-61 are rejected as allegedly being anticipated by Belleau et al. (US 6,530,753) and Cimpoia et al. (US 6,541,625). This rejection is respectfully traversed.

Firstly, the rejection refers to "Belleau et al. '753" twice. Applicants assume that this is simply a typographical error.

As with the prior rejection, this rejection simply alleges that the references anticipate the "compound of the core structure." The rejection fails to set forth where within the asserted documents there are "described," in accordance with 35 USC §102, embodiments within the scope of applicants' claimed invention. On this basis alone, the rejection should be withdrawn.

To establish anticipation, the prior art reference must teach explicitly or inherently every feature of the claimed invention. Moreover, in making an anticipation rejection, an examiner must show **where each and every feature of the claimed invention is described** in the allegedly anticipatory reference. See, e.g., *Ex parte Levy*, 17 USPQ2d 1461, 1462 (BOPA 1990) ["Moreover, it is incumbent upon the Examiner to identify wherein each and every facet of the claimed invention is disclosed in the applied reference. "] The rejection does not satisfy this requirement and should be withdrawn.

Furthermore, the assertion that the references anticipate the "compound of the core structure" in no way establishes anticipation of applicants' claimed invention. Applicants' claims do not literally encompass all compounds that posses what the Examiner has characterized as the "core structure." See, e.g., the definition of group R^1 and/or the proviso clause in claim 39.

Belleau et al. (US '753) lists Belleau et al. (US '315), discussed above, as an ancestor application. US '715 discloses a genus of dioxolane and oxathiolane nucleoside compounds, defined by formula I, as having antiviral activity. See, e.g., the text bridging columns 3-4. See

also the specific compounds disclosed at column 10, line 50-column 12, line 8, particularly the dioxolane compounds at column 11, line 335-column 12, line 8. See also the compounds disclosed in the reaction schemes and the Examples. Compare the compound disclosed by US '315.

The compounds described by US '753 do not anticipate applicants' claimed invention. See, e.g., the proviso clauses of claim 39. Furthermore, the overall disclosure of US '753 does not suggest a compound according to applicants' claimed invention.

Cimpoia et al. (US '652) discloses a steroselective synthesis process for making dioxolane nucleoside analogues with a high degree of steric purity using certain hydrolytic enzymes for separating β and α anomers from an anomeric mixture. See, e.g., column 2, ines 23-43. In addition, US '652 discloses replacing the $COOR_1$ group with a purinyl or pyrimidinyl group, or an analogue or derivative thereof. See, e.g., column 3, lines 31-61.

In terms of specific dioxolane nucleoside analogues, US '625 discloses in the Examples 15-17, and 23-34 the following compounds: 2-(S)-Benzoyloxymethyl-1,3-dioxolan-4-(S)-yl)-2-oxo-4-aminoacetyl-pyrimidine; 2-(S)-Benzoyloxymethyl-1,3-dioxolan-4-(S)-yl)-2-oxo-4-amino-pyrimidine; 2-(S)-hydroxymethyl-1,3-dioxolan-4-(S)-yl)-2-oxo-4-amino-pyrimidine; 9-(2-(R)-benzoyloxymethyl-1,3-dioxolan-4-yl)-6-chloro-2-amino purine; 9-(2-(R)-benzoyloxymethyl-1,3-dioxolan-4-yl)-6-iodo-2-amino purine; 9-(2-(R)-benzoyloxymethyl-1,3-dioxolan-4-yl)-6-(N-cyclopropyl)amino-2-amino purine; 9-(2-(R)-hydroxymethyl-1,3-dioxolan-4-yl)-6-(N-cyclopropyl)amino-2-amino purine; 9-(2-(R)-hydroxymethyl-1,3-dioxolan-4-yl-6-(N-2-cyclopropyl-2-aminomethoxy l)-2-amino purine; 9-(2-(S)-hydroxymethyl-1,3-dioxolan-4-yl)-2-amino purine; 9-(2-(S) hydroxymethyl-1,3-dioxolan-4-yl)-6-amino purine; 9-(2-(S) hydroxymethyl-1,3-dioxolan-4-yl)-6,2-diamino purine; 9-(2-(S) hydroxymethyl-1,3-dioxolan-4-yl)-6-oxo-2-amino purine; 9-(2-(S) hydroxymethyl-1,3-dioxolan-4-yl)-2-oxo-4-amino-5-methyl pyrimidine; 9-(2-(S) hydroxymethyl-1,3-dioxolan-4-yl)-2-oxo-4-amino-5-fluoro pyrimidine; 9-(2-(S) hydroxymethyl-1,3-dioxolan-4-yl)-2,4-dioxo pyrimidine; and 9-(2-(S) hydroxymethyl-1,3-dioxolan-4-yl)-2,4-dioxo-5-methyl pyrimidine.

The compounds described by US '625 do not anticipate applicants' claimed invention. See, e.g., the proviso clauses of claim 39. Furthermore, the overall disclosure of US '625 does

not suggest a compound according to applicants' claimed invention.

In view of the above remarks, withdrawal of the rejection is respectfully requested.

Rejection Under 35 USC §102(a)

Claims 39 and 49-61 are rejected as allegedly being anticipated by Gourdeau et al. (WO 00/57861). This rejection is respectfully traversed.

WO '861 discloses a genus of compounds for the treatment of leukemia. See formula I at page 4. WO '861 specifically discloses the compounds β-L-5'-benzyloxy- 2'-deoxy-3'-oxacytidine and β-L-OddC. See compounds #3 and #4 at page 18.

These compounds do not anticipate applicants' claimed invention. See, e.g., the proviso clauses of claim 39. Furthermore, the overall disclosure of WO '861 does not suggest a compound according to applicants' claimed invention.

In view of the above remarks, withdrawal of the rejection is respectfully requested.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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